

CONTINUOUS GROWTH OF SINGLE-WALL CARBON NANOTUBES USING CHEMICAL VAPOR DEPOSITION

ABSTRACT

The invention relates to a chemical vapor deposition process for the continuous growth of a carbon single-wall nanotube where a carbon-containing gas composition is contacted with a porous membrane and decomposed in the presence of a catalyst to grow single-wall carbon nanotube material. A pressure differential exists across the porous membrane such that the pressure on one side of the membrane is less than that on the other side of the membrane. The single-wall carbon nanotube growth may occur predominately on the low-pressure side of the membrane or, in a different embodiment of the invention, may occur predominately in between the catalyst and the membrane. The invention also relates to an apparatus used with the carbon vapor deposition process.

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